# Charge to the Science Advisory Board
# for Peer Review of the Contaminated Sediment Science Plan

September 24, 2002

Background

U.S. Environmental Protection Agency's (U.S. EPA) mission is to protect human health and to safeguard the natural environment – air, water, and land – upon which life depends. Sediments are an integral component of aquatic ecosystems providing habitats for many aquatic organisms. Many sediment-dwelling organisms at the base of the food chain are eaten by organisms at higher trophic levels. Contaminants in sediments[1] pose a threat to human health, aquatic life, and the environment. Chemicals released to surface waters from industrial and municipal discharges, atmospheric deposition, and polluted runoff from urban and agricultural areas can accumulate to environmentally harmful levels in sediment. Humans, aquatic organisms, and other wildlife are at risk through direct exposure to pollutants or through consumption of contaminated fish and wildlife. Exposure to these contaminants is linked to cancer, birth defects, neurological defects, immune dysfunction, and liver and kidney ailments. Contaminated sediments may also cause economic impacts, at both the local and regional level, on the transportation, fishing, tourism, and development industries.

Sediment contamination is an issue that cuts across offices and jurisdictions throughout the Agency, other Federal agencies, state agencies, and tribes. Significant resources are spent by a number of Agency offices to address contaminated sediment problems. U.S. EPA offices addressing this problem include: the Superfund Program, Office of Water, Office of Solid Waste, Great Lakes National Program Office, Office of Pollution Prevention and Toxic Substances, Office of Research and Development, and U.S. EPA Regional Offices. These offices operate under the mandate of many statutory provisions including the Comprehensive Emergency Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), the Clean Water Act (CWA), the Oil Pollution Act (OPA), the Toxic Substances Control Act (TSCA), and the Marine Protection, Research, and Sanctuaries Act (MPRSA).

In response to the cross-cutting and multi-faceted dimensions of the issue, U.S. EPA's Science Policy Council (SPC) initiated in 2000 the development of the Contaminated Sediments Science Plan (CSSP). The CSSP is a mechanism to develop and coordinate Agency office- and region-wide science activities in the contaminated sediments area by providing an analysis of the current Agency science activities in this area, identifying and evaluating the science gaps, and providing recommendations for filling these gaps. The CSSP does not constrain recommendations to fit prescribed resources. Instead, the recommendations are a comprehensive list that U.S. EPA organizations can consider when balancing resource allocations across competing high-priority needs. The CSSP is the first formal example of an Agency science plan on a specific cross-Agency office- and region-wide activity. The expectation exists that additional science plans, addressing other cross-cutting issues, will be formulated similar to the CSSP to improve EPA's environmental decision-making, and conserve both human and financial resources.

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[1] Contaminated sediments are defined as soils, sand, and organic matter, or minerals that accumulate on the bottom of a water body and contain toxic or hazardous materials that may adversely affect human health or the environment (U.S. EPA's Contaminated Sediment Managem ent Strategy (U.S. EPA-823-R-98-001).

The CSSP has three goals to promote the vision of providing a strong scientific basis for addressing contaminated sediments:
1. Development and dissemination of tools and science necessary to address the management of contaminated sediments.
2. Enhancement of the level of coordination and communication of science activities dealing with contaminated sediments across the Agency.
3. Development of an effective, cost-efficient strategy to promote these scientific activities, including research.

Charge Questions

1) The Contaminated Sediments Science Plan (CSSP) is the first official Agency science plan of its kind designed to address a significant cross-agency environmental issue in a systematic and integrated fashion. Chapter One of the CSSP discusses the goals, objectives, and how the CSSP relates to the Agency's mandate. Are the goals and objectives of the plan understandable and appropriate to the subject, and does the CSSP adequately convey the need for such a planning document?

2) Chapter Two of the CSSP provides an overview of the contaminated sediment problems and issues across the Agency. The brief description of issues in Chapter Two is meant to provide the overall context for the more detailed discussion of specific science needs given in Chapter Three. Are the major areas of contaminated sediments science identified in Chapters Two and Three (sediment site characterization, exposure assessment, human health effects and risk assessment, ecological effects and risk assessment, sediment remediation, baseline and post-remediation monitoring, risk communication, and information management and exchange activities) addressed adequately? Are any major areas missing?

3a) Chapter Four provides the key recommendations for future Agency priority science activities, including research, from the identified research needs and discussion in Chapter Three. For each recommendation, critical U.S. EPA partners and the immediate or long-term nature of the science activity are proposed. Do the CSSP recommendations meet the CSSP's goals and objectives?

3b) Are the key recommendations clearly defined and appropriate to address the identified CSSP science needs, and are the priorities identified appropriate?

3c) Are the CSSP's recommendations responsive to the identified need for coordination, particularly intra-agency?